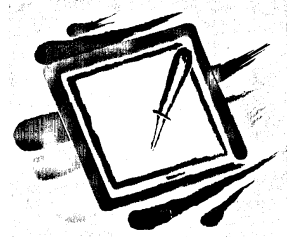


# WACOM



## Digitizer User's Manual

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**A3 • A3+ • A4+**

SD-310E

SD-311E

SD-312E

SD-320E

SD-321E

SD-322E

SD-420E

SD-421E

SD-422E

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## Digitizer User's Manual A3•A3+•A4+

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### About the Manuals

This manual presents information on digitizers in general and on the WACOM SD-Series E-Type digitizers in particular with sections on definitions, principles of operation, maintenance, and DIP switch settings.

- For PC installation procedures, see *PC Installation and Utilities Manual*.
- For Macintosh installation procedures, see *Macintosh Installation and Operation Manual*.
- For programming information, see *WACOM Programmer's Manual*.

1

## The WACOM Advantage

Congratulations on choosing the WACOM (pronounced **wah'-cum**) advantage and welcome to the world of cordless digitizing.

The unique WACOM technology provides a set of selection and drawing tools ergonomically designed to be natural extensions of the hand. They are *cordless*, and free the designer from the interruption of snarled cords. They are *ultra-light*, and use no batteries.

Users can choose from a variety of pointing devices including a four-button cursor, a standard stylus, and the first cordless *pressure* stylus, providing the user with a new dimension of input capability.

WACOM has also developed a tablet surface that simulates a pen-to-paper feel. Thus the drawing tools and tablet provide a more natural and comfortable man-machine interface.

Great Choice!

**Software**

To facilitate installation and use, the WACOM digitizer comes with drivers and utilities and with helpful hints to allow the tablet to be used with most applications which support a pointing device.

**Manuals**

WACOM publishes several digitizer Manuals:

- The *User's Manual* provides information on digitizer components, maintenance, troubleshooting, principles of operation, and DIP switches.
- *PC Installation and Utilities Manual* provides information on drivers and utilities included with the digitizer, and information on using the digitizer in different PC application environments.
- *Macintosh Driver Installation and Operation Manual* extends the WACOM technology to the Macintosh family.
- The *WACOM Programmer's Manual* (available on request) provides software developers the ability to control the flow and format of data by software commands.

**Support**

WACOM provides telephone support. (See "Troubleshooting.")

**Warranty**

Warranty information and the license agreement are included in this package.

**Definitions**

## The Basics

A digitizer is an electronic device that transmits coordinate data to software running on a host computer. Like those shown in Figure 2-A, digitizer components typically include a flat drawing surface called a "tablet," a drawing tool called a "stylus," and a selection tool called a "cursor." The stylus and cursor are referred to generally as "pointing devices."

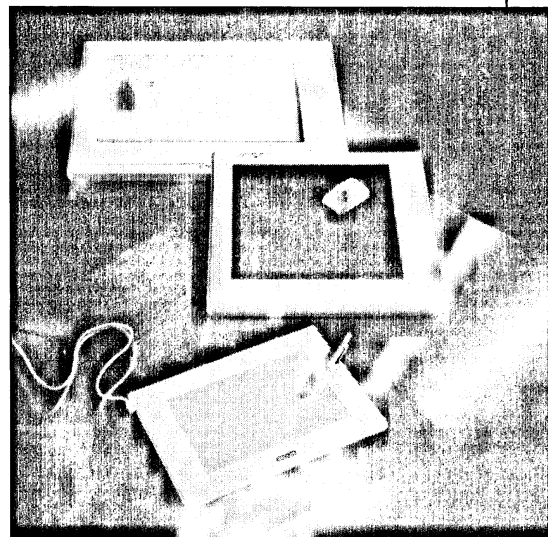


Figure 2-A  
WACOM SD-Series Digitizers

## The Tablet

## Voltage Selection Switch

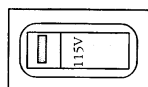
Digitizer size is expressed in terms of *effective area*, which is the part of the tablet surface which can detect the position of pointing devices. *Reading height* is the maximum distance above the surface of the tablet that a pointing device can be detected. When a pointing device is being detected by the tablet it is said to be *in proximity*.

The WACOM Super Digitizers (SD-Series, E-Type) come with an interface cable, drivers, and utilities for IBM PC compatible or for Macintosh computers.

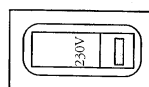
The tablet switches and connections are shown in Figures 2-B, 2-C-a, 2-C-b and 2-E

The tablets are available in three surface types shown in Figure 2-D. For other specifications, see Appendix B.

A voltage selection switch is located on bottom of the digitizer as shown in Figure 2-B. The internal power supply may be operated at the following voltage.



Setting for 115V



Setting for 230 V

Position	Ranges
115V (110V) .....	100-120 Vac/50-60Hz
230V (220V) .....	200-240 Vac/50-60Hz

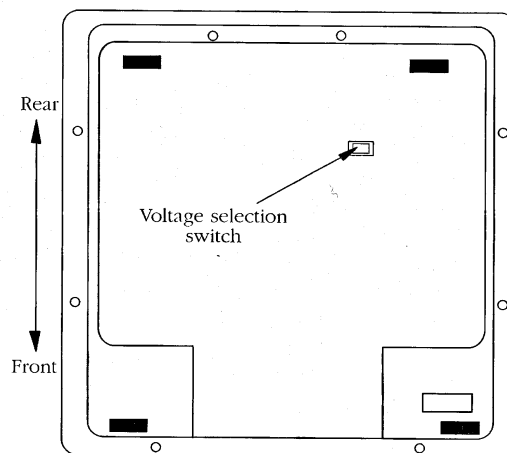


Figure 2-B  
Tablet underside

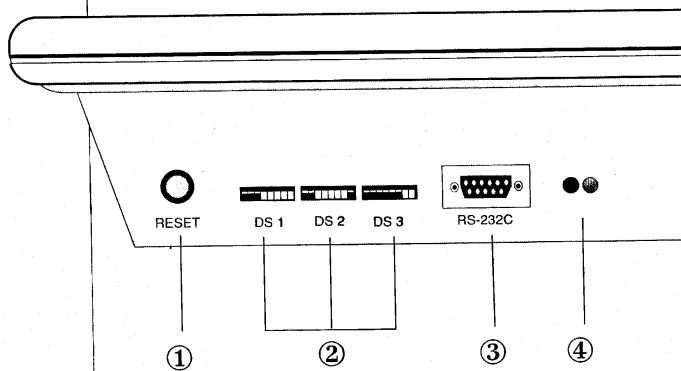
## WARNING

**Factory set at 230V**  
**Before using check the voltage selection switch.**

**Tablets may be damaged by being used with the voltage selection switch incorrectly positioned.**

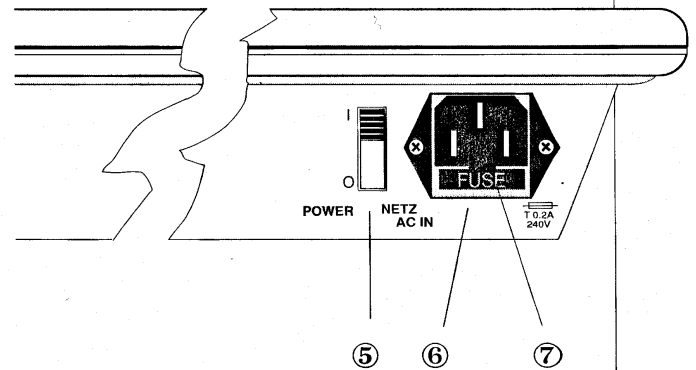
Voltage  
Warning

Figure 2-C-a  
Tablet Rear View (left side)



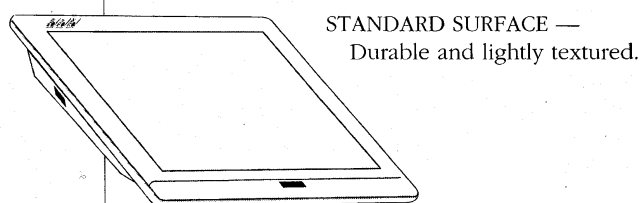
- ① RESET Pressing the Reset Button forces the tablet to read the DIP switches
- ② DS 1,2,3 DIP Switch Banks 1,2, and 3
- ③ RS-232C Connection that takes the male end of the interface cable
- ④ ADJUSTMENT TRIMMERS Leave them at factory settings

Figure 2-C-b  
Tablet Rear View (right side)

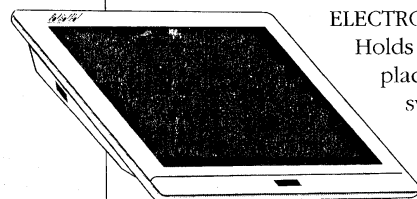


- ⑤ POWER ON / OFF switch
- ⑥ AC IN Connection that takes the female end of the power cable
- ⑦ FUSE HOLDER Holds the active fuse and a spare, located below the AC IN plug

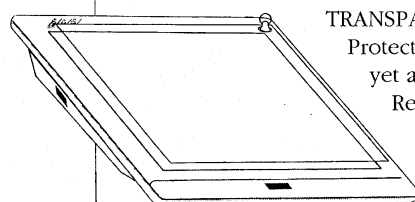
Figure 2-D  
Tablet Surfaces



STANDARD SURFACE —  
Durable and lightly textured.



ELECTROSTATIC SURFACE —  
Holds a sheet of paper in place at the flick of a switch, eliminating damage to originals from sticky tape. Ideal for tracing.



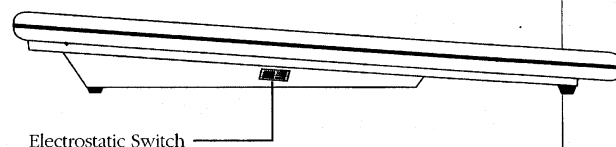
TRANSPARENT MENU PANEL —  
Protects a paper menu or map yet allows complete visibility. Replaceable.

The electrostatic surface holds a sheet of paper in place at the flick of a switch, eliminating damage to originals from sticky tape.

WACOM electrostatic tablets have a black surface, they include models SD-421E, SD-321E and SD-311E.

The electrostatic switch is located on the left side of the tablet.

Figure 2-E  
Electrostatic Switch location



Position the original that you want to trace on the tablet, with the electrostatic switch off (0 is off). When your original is correctly positioned turn the electrostatic switch on (1 is on). Your original will adhere to the tablet surface. When finished, turn the electrostatic switch off and remove your original.

To preserve the electrostatic surface, put paper, mylar, or acetate on the active surface of your WACOM Tablet. Writing directly on the electrostatic surface with a stylus may leave scuff marks on the surface. This is normal wear and does not harm the tablet.

*Electrostatic Surface*

*Switch Location*

*Surface Care*

### Indicator LEDs

The digitizer has three indicator LEDs (Light-Emitting-Diodes) in the upper left corner of the tablet as shown in figure 2-F below.

#### POWER Indicator

Shows that the digitizer is connected to the mains and is "powered-up".

#### READY indicator

Shows that a pointing device is in the effective area of the tablet.

#### STATUS indicator

Shows that a button has been activated on a non-pressure sensitive pointing device; e.g. normal stylus or cursor.

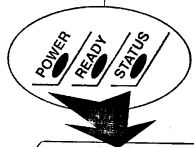


Figure 2-F  
Indicator LEDs

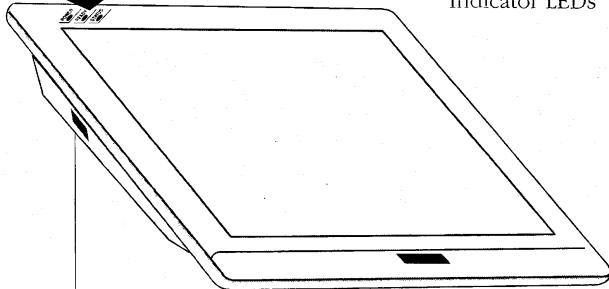
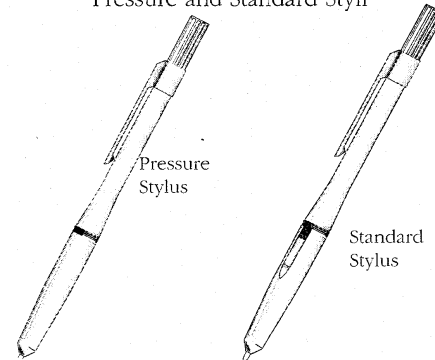


Figure 2-G  
Pressure and Standard Styli



### Pointing Devices

The WACOM pointing devices are shown in Figures 2-G and 2-H. For specifications, see Appendix B.

The *pressure stylus* has a pressure-sensing tip. Model SP-300 has a firmer feel (0-500 grams pressure) and can be identified by a blue band. Model SP-310 has a softer feel (0-300 grams pressure) and can be identified by a red band.



The *standard stylus* is a pen-like tool with a tip switch, a side or barrel switch, and is available in two models. The SP-200, with a grey band, is a *non-stroke* stylus meaning there is a minimum amount of travel and force needed to close the tip switch. The SP-200 is generally suitable for all applications. The SP-210, with a red band, is a *stroke* stylus meaning there is more travel and force needed to close the tip switch. The SP-210 may be preferred if a 'sure feel' operation is required, for example for CAD menu selections.

The replaceable tip is available in plastic for drawing directly on the tablet or in pen-like colour refills typically used for tracing.

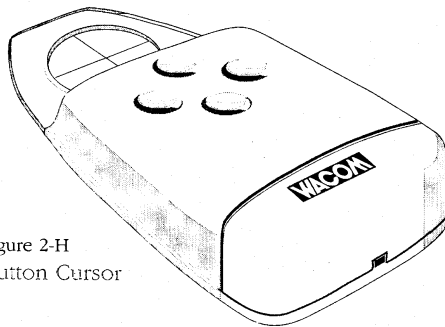


Figure 2-H  
Four-Button Cursor

The four-button *cursor* is a mouse-like tool with cross hairs used for making precise selections.

Like a mouse, a pointing device provides input to a host computer.

Unlike a mouse, a cursor or stylus provides both very precise selection and drawing capabilities. A stylus, in particular, is a natural freehand drawing device, like a pencil, and is therefore an ideal design tool for engineers, architects, graphic artists, and desktop publishers.

Unlike a mouse, a digitizer can have a single absolute origin. The advantage from an application standpoint is that the user can define an area on the tablet, as a menu, for example.

There is a direct correspondence between the distances on the tablet and distances on the computer screen. A mouse, on the other hand, creates a new origin with every touchdown.

The digitizer operates according to a set of parameters that the user can define through DIP switches (also changeable through software - see Programmer's manual). The digitizer reads the switches whenever the user turns the tablet on or presses the RESET button. For the location of switches and buttons, see "The Tablet" in this section.

***Like  
a Mouse?***

***Unlike  
a Mouse!***

***DIP  
Switches***

2

To change a DIP switch setting, use a small tool (such as a tiny screwdriver or ballpoint pen) to flip the switch. Do not use a pencil as the graphite can collect under the switch.

The command set you select (using the appropriate DIP switches) affects the meaning of the remaining DIP switches. Be sure to use the correct DIP switch chart for the command set you are using. For DIP switch defaults, definitions, and options, refer to Appendix A.

<sup>1</sup> "DIP" is an acronym for "Dual-In-line Package" — a type of switch housing that originated with integrated circuits.

## Principles of Operation

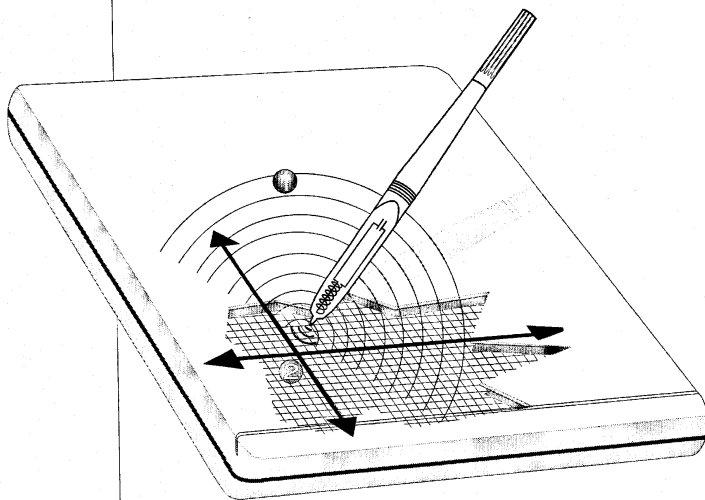
With WACOM's patented technology, the digitizer alternates continuously between transmit and receive modes (changing mode about every 20 microseconds). Refer to Figure 3-A. In transmit mode, the tablet sends a signal at a particular frequency, producing electromagnetic resonance in the pointing device circuit. The pointing device stores the electromagnetic energy in a coil-and-capacitor resonant circuit.

When the tablet goes into receive mode, the pointing device re-emits a signal at a different frequency which carries switch and pressure data to the tablet. The tablet computes the coordinates, based on signal strength, across several grid wires under the tablet surface. The tablet then translates the data to millimetres or inches, ASCII or binary,<sup>1</sup> and sends the data through the serial port to the host.

There is no power source in the pointing devices; calibration and tuning are unnecessary.

<sup>1</sup> Depending on DIP switch settings or programmer instructions

Figure 3-A  
The WACOM Technology



- ① TRANSMIT MODE — The tablet sends a signal at frequency A, inducing electromagnetic resonance in the pointing device.
- ② RECEIVE MODE — The pointing device re-emits a signal at frequency B.

## Maintenance

Regular cleaning of the digitizer will help prolong its life and requires careful attention. To clean the digitizer, follow these steps:

1. Set the tablet power switch to OFF.
2. Unplug the power cable from the back of the digitizer.
3. Dilute a neutral detergent solution, such as dishwashing liquid, in a bowl of lukewarm water.

Do not clean the digitizer with any volatile liquid like paint thinners, turpentine, or benzene, etc. Such solvents can damage the plastics of the digitizer.

### Cautions

Use proper care when working with or storing digitizer components:

- Avoid extreme heat and cold. Do not store components outdoors.
- Do not allow the components to stay in the direct rays of the sun.
- Do not allow any fluids to come into contact with the components, except when cleaning.
- Keep the tablet surface free of dust.
- Do not drop or hit the tablet, cursor, or stylus.
- Do not use any volatile liquid, like paint thinner, turpentine, or benzene, etc. which can damage the plastic surface.

### Refills

To replace the refill, follow these steps:

1. Using a tool such as a pair of small pliers or strong tweezers, pull the old refill straight out of the stylus.
2. Insert the new refill straight into the space where the old refill had been.
3. Check to make sure the new tip is firmly in place by holding the stylus vertically and applying firm pressure on the tip.

Refills\* for the WACOM styli are available from your local representatives or distributors.

Stylus	Refill type	Ref. No.
STANDARD stylus (SP-200 & SP-210)	Standard	PLD -1
	Ink, Red	PLD -2R
	Ink, Blue	PLD -2BL
	Ink, Black	PLD -2BK
	Ink, empty	PLD -3
PRESSURE Stylus (SP-300 & SP-310)	Pressure	PLD -4

\* The standard refill will not fit in a pressure stylus.

The digitizer fuse is a 5 x 20 mm Slow Blow 0.2 Amp fuse like the Littelfuse® type: 218.200. The rating of the fuse is 250V - 200mA.

Fuse replacement (Using the lever)

1. Remove the power cable from the AC IN connector before checking or replacing the fuse.

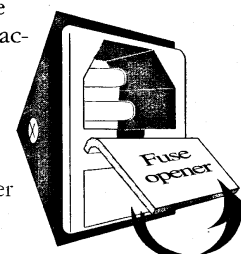


Figure 4-A  
Fuse box opener

### Fuses

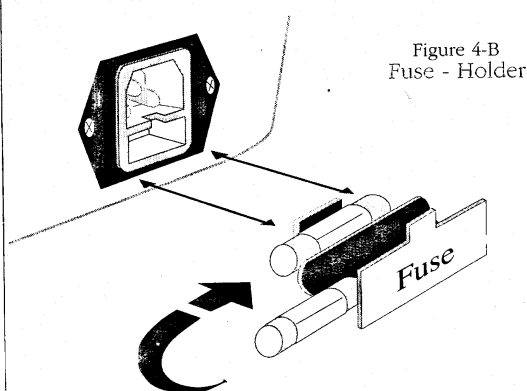


Figure 4-B  
Fuse - Holder

2. Remove the fuse holder from AC IN connector using the supplied fuse box opener as shown in figure 4-A. Replace the broken fuse with the spare provided (Figure 4-B).

If the fuse blows again, do not attempt to use a larger value fuse. Contact your sales representative for repair.

**WARNING**

To prevent fires or electrical shocks always replace fuses with the same type and rating.

## Troubleshooting

1. If your digitizer is not working at all, check the items below:
  - Is the power cable connected?
  - Is the power switch turned on?
  - Is the interface cable between the tablet and the computer connected securely?
  - Check the settings on the DIP switches.
2. If the POWER indicator is off, but the digitizer has power, try replacing the fuse. For instructions, see "Maintenance." If the fuse blows again, contact your WACOM sales representative.
3. To see if there is a problem with the power cable, attach the cable to a component you know to be operational.

4. If the host is not receiving signals, make sure there is only one pointing device in the effective area at one time.
5. If you are receiving unusual coordinate data, check to make sure you are using the correct pointing device for the application.

Standard Stylus – Use with non-pressure applications.

Pressure Stylus – Use with applications which support pressure data.













Colour switches and bands are used to identify the different styli. See Appendix B.

The pressure stylus *cannot* be used with MM 961, MM 1201, or Bit Pad Two emulation since these command sets do not support the pressure feature.

To talk with a WACOM technician, call(49) 2131-166001 and ask for Technical Support.

## APPENDIX - A

**DS 1**

1	2	3	4	5	6	7	8	
		ASCII						ON
WACOM II/II-S								
COMMAND SET		DATA FORMAT	OPERATION MODE		ORIGIN TYPE	UNIT OF MEASURE	ALWAYS TRANSMIT	
			Point		Absolute	Millimeters	No	
								OFF

**DS 2**

1	2	3	4	5	6	7	8	
	9600 BPS						8 bits	ON
← BAUD RATE →			PARITY		STOP BITS	DSR MONITOR	DATA LENGTH	
			No Parity		1 Stop Bit		7 bits	OFF

**DS 3**

1	2	3	4	5	6	7	8
			Upper left	Active	CR / LF		
TRANSFER RATE			ORIGIN LOC	TONE	DATA TERMINATOR		NOT USED
						ON	
						OFF	

■ = DIP switch position

A-2

## WACOM II and WACOM II-S DIP Switch Options

**DS 1**

<b>COMMAND SET</b>		<b>1</b>	<b>2</b>
WACOM II		ON	ON

<b>DATA FORMAT</b>		<b>3</b>
Binary		OFF
ASCII		ON

<b>OPERATION MODE</b>		<b>4</b>	<b>5</b>
Point	OFF	OFF	OFF
Suppressed	OFF	ON	ON
Switch Stream	ON	OFF	OFF
Stream	ON	ON	ON

<b>ORIGIN</b>		<b>6</b>
Absolute	OFF	
Relative	ON	

<b>UNIT OF MEASURE</b>		<b>7</b>
Millimeters	OFF	
Inches	ON	

<b>ALWAYS TRANSMIT</b>		<b>8</b>
No	OFF	
Yes	ON	

## Factory Setting

ON or OFF

DS 2

BAUD RATE (bits/sec)			
1	2	3	
150	OFF	OFF	OFF
300	OFF	OFF	ON
600	OFF	ON	OFF
1200	OFF	ON	ON
2400	ON	OFF	OFF
4800	ON	OFF	ON
9600	ON	ON	OFF
19,200	ON	ON	ON

PARITY			
4	5		
None	OFF	—	
Odd	ON	OFF	ON
Even	ON	ON	ON

STOP BITS	
1	2
OFF	ON
ON	ON

DSR MONITOR	
No	Yes
OFF	ON

DATA LENGTH	
7 bits	8 bits
ON	OFF
OFF	ON

DS 3

TRANSFER RATE (points/sec)			
	1	2	3
1	OFF	OFF	OFF
5	OFF	OFF	ON
10	OFF	ON	OFF
20	OFF	ON	ON
50	ON	OFF	OFF
67	ON	OFF	ON
100	ON	ON	OFF
MAX	ON	ON	ON

ORIGIN LOCATION		4
Lower left		OFF
Upper left		ON

TONE		5
Disabled		OFF
Active		ON

DATA TERMINATOR			6	7
CR		OFF	OFF	OFF
LF		OFF	ON	ON
CR/LF		ON	—	—

NOT USED		8
Mandatory setting		OFF

## WACOM II and II-S

### DIP Switch Definitions

#### DS 1 DIP Switch(es)

- |     |                |   |
|-----|----------------|---|
| 1,2 | COMMAND SET    | WACOM II and<br>WACOM II Subset ( <i>SD-510C only</i> )   |
| 3   | DATA<br>FORMAT | ASCII or Binary format of the data sent<br>from the digitizer to the host   |
| 4,5 | OPERATION      | <p>Determines the mode in which coordinate data is sent to the host:</p> <ul style="list-style-type: none"> <li>■ Point Mode<br/>Sends one pair of X,Y coordinates with each switch press of the pointing device</li> <li>■ Suppressed Mode<br/>Sends X,Y coordinates only when a "significant" pointing device event occurs. This event could be a: <ul style="list-style-type: none"> <li>• Switch press or release</li> <li>• Entering or leaving the effective area</li> <li>• Change in X or Y greater than a specified value</li> </ul> </li> <li>■ Switch Stream Mode<br/>Sends X,Y coordinates continuously while a button or stylus switch is pressed</li> <li>■ Stream Mode<br/>Sends X,Y coordinates continuously</li> </ul> |

A-4 Appendix A

- |   |                    |  |
|---|--------------------|--|
| 6 | ORIGIN TYPE        | <ul style="list-style-type: none"> <li>■ Relative<br/>Like a traditional mouse, every touchdown creates a new origin.</li> <li>■ Absolute<br/>The origin is fixed at the location selected with the ORIGIN LOCATION DIP switch.</li> </ul>   |
| 7 | UNIT OF<br>MEASURE | Inches or millimetres. Measurement unit of the data coordinates. See "Resolution" under "General Specifications" in Appendix B.  |
| 8 | ALWAYS TRANSMIT    | <ul style="list-style-type: none"> <li>■ Yes<br/>In stream mode, coordinates will be sent continuously when the pointing device is in or out of the effective area.</li> <li>■ No<br/>In stream mode, no data will be sent to the host when the pointing device is out of the effective area.</li> </ul> |





## WACOM II and II-S DIP Switch Definitions (continued)

### DS 2 DIP Switch(es)

1,2,3 BAUD RATE	150 - 19,200 bps Number of bits transmitted per second from the digitizer to the host. Baud rate for the digitizer and host must be the same.
4,5 PARITY	Parity, a method used to determine if an error occurred in data transmission, can be even, odd, or none. Parity for the digitizer and host must be the same.
6 STOP BITS	Number of stop bits to signal the end of a character. Stop bits for the digitizer and host must be the same.
7 DSR MONITOR	Determines whether or not the tablet responds to the DSR input signal of the RS-232C serial port.
8 DATA LENGTH	The number of bits in a character. Must be the same for digitizer and host.

### DS 3 DIP Switch(es)

1,2,3 TRANSFER RATE	Number of coordinate pairs transmitted per second with related switch or pressure data
4 ORIGIN LOCATION	If ORIGIN TYPE is "absolute" (DS 1, switch 6), ORIGIN LOCATION determines whether the origin is in the upper or lower left of the tablet.
5 TONE	Activates or disables audio feedback
6,7 DATA TERMINATOR	A data delimiter — CR/LF, CR, LF. The characters sent to signal the end of an X,Y coordinate pair in ASCII mode data transmission
8 NOT USED	Must be set to OFF (mandatory setting)



# MM 961 and 1201 DIP Switch Defaults

DS 1

1	2	3	4	5	6	7	8	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
COMMAND SET		DATA FORMAT		OPERATION MODE		ORIGIN		REMOTE
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		OUT-OF-RANGE INDICATOR
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		OFF

DS 2

1	2	3	4	5	6	7	8	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
BAUD RATE		PARITY		STOP BITS		NOT USED		DATA LENGTH
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		OFF

DS 3

1	2	3	4	5	6	7	8	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
TRANSFER RATE		RESOLUTION		TABLET SELECTION NUMBER		NOT USED		
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		OFF

■ = DIP switch position

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## MM 961 and MM 1201 DIP Switch Options

DS 1

COMMAND SET	1	2
MM 1201	OFF	OFF
DATA FORMAT	3	
Binary	OFF	ON
ASCII	ON	ON
OPERATION MODE	4	5
Point	OFF	ON
Switch Stream	ON	ON
Stream	ON	ON
ORIGIN TYPE	6	
Absolute	OFF	ON
Relative	ON	ON
REMOTE	7	
Disabled	OFF	ON
Enabled	ON	ON
OUT-OF-RANGE INDICATOR	8	
No	OFF	ON
Yes	ON	ON

DS 3

TRANSFER RATE (points/sec)		1	2	
2		OFF	OFF	
20		OFF	ON	
50		ON	OFF	
100		ON	ON	
RESOLUTION (lines/inch) – all tablets				
	3	4	5	6
1	OFF	OFF	OFF	OFF
2	OFF	OFF	ON	ON
4	OFF	OFF	ON	OFF
100	OFF	ON	ON	ON
200	OFF	ON	OFF	OFF
254	OFF	ON	ON	ON
400	OFF	ON	ON	OFF
500	OFF	ON	ON	ON
508	ON	OFF	OFF	OFF
ADDITIONAL RESOLUTION (MM 1201, Wacom A2, A3, A3+, A4+)				
	3	4	5	6
1000	ON	OFF	OFF	ON
1016	ON	OFF	ON	ON
1016	ON	ON	ON	ON
1016	ON	ON	OFF	OFF
1016	ON	ON	ON	ON
1016	ON	ON	ON	OFF
1016	ON	ON	ON	ON
TABLET SELECTION NUM.7				
0				OFF
1				ON
N	USED			8

DS 2

BAUD RATE (bits/sec)	1	2	3
150	OFF	OFF	OFF
300	OFF	OFF	ON
600	OFF	ON	OFF
1200	OFF	ON	ON
2400	ON	OFF	OFF
4800	ON	OFF	ON
9600	ON	ON	OFF
19,200	ON	ON	ON
PARITY	4	5	—
None	OFF	—	—
Odd	ON	OFF	—
Even	ON	ON	ON
STOP BITS	6		
1	OFF		
2	ON		
DSR MONITOR	7		
No	OFF		
Yes	ON		
DATA LENGTH	8		
7 bits	OFF		
8 bits	ON		

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— ON or OFF

## User DIP Switch Settings

*Use this page to record your configuration.*

	1	2	3	4	5	6	7	8	
DS 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
	COMMAND SET		DATA FORMAT		OPERATION MODE		ORIGIN TYPE		UNIT of MEASURE
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF

	1	2	3	4	5	6	7	8	
DS 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
	← BAUD RATE →		PARITY		STOP BITS		DSR MONITOR		DATA LENGTH
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF

	1	2	3	4	5	6	7	8	
DS 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON
	TRANSFER RATE		ORIGIN LOC		TONE		DATA TERMINATOR		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OFF

■ = DIP switch position

# APPENDIX - B

## Tablet Specifications

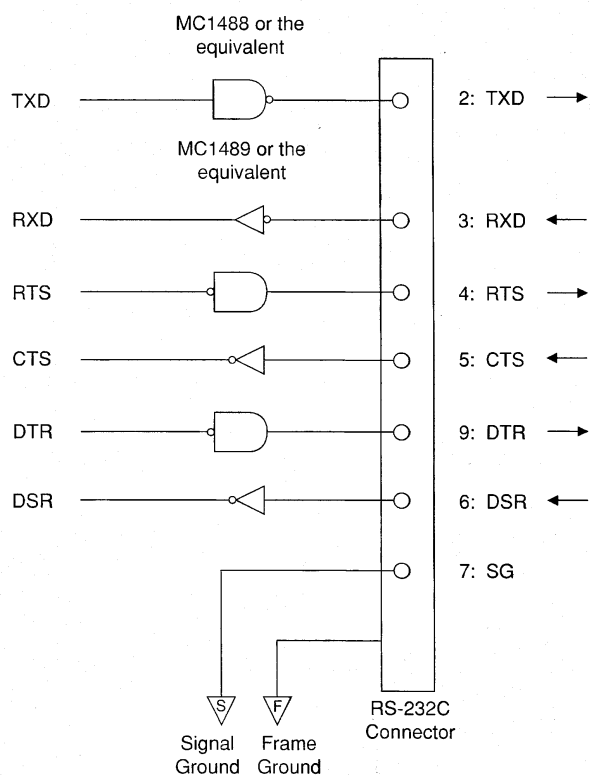
	Size	A3	A3+	A4+
Surface	Plain	SD-310E	SD-320E	SD-420E
	Electrostatic	SD-311E	SD-321E	SD-421E
	Transparent	SD-312E	SD-322E	SD-422E
Effective reading area	(mm)	457.2 x 304.8	381 x 381	304.8 x 304.8
Accuracy	(mm)	± 0.15mm	± 0.15mm	± 0.15mm
Maximum reading height	(mm)	Cursor: 8mm, Stylus: 4mm		
Maximum report rate	(Points per second)	205	205	205
External dimentions	(mm)	582 x 440	528 x 526	420 x 420
Weight	(Kg)	5.2	5.5	4.0
Interface	RS-232C			
Command sets	WACOM II, Bit Pad Two,MM			
Operating temperature	5-40°C (41-104°F)			
Storage temperature	-10-60°C (14-140°F)			
Humidity	20% - 80% (non-condensing)			
Power supply	AC 100 - 120V (50/60Hz) AC 220 - 240V (50/60Hz)			

## Pointing Device Specifications

Four button Cursor	SC-100	
Size (mm)	55 x 118 x 21	
Weight (grams)	45	
Standard Styli	SP-200	SP-210
Tip Travel	0.2 mm (non-stroke)	0.9 mm(stroke)
Band/Switch Colour	Grey	Red
Switches	Tip and side	Tip and side
Refills*	Duracon or Ink-refill	Duracon or Ink-refill
Size (mm)	11 x 148	11 x 148
Weight (grams)	11	11
Pressure Styli	SP-300	SP-310
Band colour	Blue	Red
Switches	Pressure-sensing tip	Pressure-sensing tip
Pressure (grams)	0-500	0-300
Feel	Firm	Soft
Refill*	Duracon	Duracon
Tip stroke (mm)	1.2	1.2
Size (mm)	11 x 148	11 x 148
Weight (grams)	10	10

\*See "Maintenance" for purchase information

## RS-232C Digitizer Circuit



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